BACT Analysis

Pursuant to Article XXI, § 2102.04(b)(6)

Quenching from Batteries 13-15 and 19-20

Installation Permit Application for the Proposed Quench Tower Replacement Project

August 30, 2010

Top-Down Assessment of Control Technology Options for Quenching Emissions

Identification of Available Control Technology Options

VOC, SO_2, TSP, PM_{10}, and $PM_{2.5}$ emissions from quenching are attributable to generation of dust by the mechanical operation of depositing the large volume of water on the coke.

The nature of the quenching operation, involving periodic bursts of a large volume of water-saturated air containing relatively low levels of entrained particulate matter, precludes the consideration of ESPs, scrubbers, and baghouses that are used for other (even large-scale) sources of particulate emissions. The technology options, including emissions control technologies applied to other types of emissions units that could be considered for technology transfer to this application, were identified for evaluation:

- Tall tower with chevron baffle design
- Dry quenching

Technical Feasibility Assessment

A tall tower with a chevron baffle design is technically feasible for this application. The Low Emission Quench (LEQ) was designed to meet the particulate emissions standard for dry quenching in Germany while avoiding the issues associated with dry quenching (as discussed below).

Dry quenching is not technically feasible for this application. There are no known applications of a dry quenching system in operation in the United States. Of the known dry quench systems in operation in Eastern Europe and Asia, the average dry quench cycle time is 12 minutes. This makes dry quenching technically infeasible for Batteries 13-15 and 19-20, which have an average oven cycle time of 6.18 and 7.20 minutes respectively. Safety is another key concern since there is a possibility for a gas explosion (due to incompletely carborized coke) or worker exposure to ground level release of CO.

A dry quenching system involves substituting an inert gas such as nitrogen for water for cooling the coke. According to Chapter 10 of to STAPPA/ALACO's March 2006 report "Controlling Fine Particulate Matter Under the Clean Air Act: A Menu of Options," "some plants in Europe have switched from water quenching to dry quenching to limit emissions of PM and VOCs," but "[T]his does require major construction activities and associated costs." More specifically, the "European Commission (EC) estimates that a dry quenching plant may cost between 10 and 15 times more than a wet quenching station." As stated on pages 137 to 139 of the EC's December 2001 report entitled "Integrated Pollution Prevention and Control (IPPC) Best Available Techniques Reference Document on the Production of Iron and Steel," dry quenching processes were generally "intended for application in coke oven plants located in regions which suffer from long periods of severe cold, such as for example: Siberia, Finland, Poland, where wet quenching of coke is difficult or even impossible."

In reference to the CDQ type dry quenching system, USEPA's BID notes that "[T]here are no visible emissions" and that "heat from the hot coke is recovered with minimum operating costs". The USEPA's BID also discusses the Kress Indirect Dry Cooling system that was demonstrated at the Bethlehem Steel Corporation Sparrows Point mill in 1991, which reportedly "looks promising for the

reduction of pushing and quenching emissions" (while not stated by USEPA, this would also be a means of controlling traveling emissions), but that the demonstration identified some problems with the technology that were not resolved while it was being tested. A search of the open literature did not identify a single case in which the Kress technology has been applied other than the cited demonstration at Sparrows Point, and therefore it cannot be considered as an available option for this application.

A documented instance of the commercial application of Coke Dry Quenching (CDQ) can be found at the Kaiserstuhl Coke Plant in Dortmund, Germany. Stoppa et al., 1999[10] discuss the relative merits and demerits of dry quenching observed at this facility. According to studies conducted at this plant, the dust emissions (PM emissions) range from 15-50 g/ton coke for a traditional wet quenching system, compared to less then 10 g/ton coke for a Low Emission Quench System, compared to 1-20 g/ton coke for a dry quenching system. While this exhibits a clear advantage of the dry quenching system as opposed to the wet quenching system for abatement of PM emissions, the same study showed that dry quenching process results in significantly higher quantities of gaseous pollutants such as SO_2 and CO. This fact makes it difficult to identify the better of the two technologies.

For those and possibly other reasons, the CDQ process at the Kaiserstuhl plant was shut down: the Kaiserstuhl plant itself was shut down subsequent to the discontinuation of the CDQ process. There are in fact no other dry quenching plants known to be in operation at this time in Europe. As indicated above, the LEQ tall wet quenching tower design featuring chevron-style baffles was developed for plants such as Kaiserstuhl to meet the same emissions limits as were met by dry quenching but without the other detriments.

Another obvious concern regarding dry quenching is that while this will reduce water consumption for a coke oven battery by a significant amount, this advantage may be outweighed by the associated raw material consumption and other system demands such as generation of the inert gas and operating and maintenance of a heat recovery power generation system, of a CDQ as well as the attendant indirect emissions.

The establishment of a dry quenching process at Clairton would require a large area of real estate which is not available in the current scenario of retrofitting an existing coke battery with a dry quenching facility. The average footprint for a dry quench process is 30 meters wide by 50 meters long. In addition the current battery infrastructure does not support dry quenching as the battery was originally configured for wet quenching.

Also, the coke dry quenching process requires a backup wet quenching process during occurrences of downtime and there is an increased risk of powdering and combustion of the coke during dry quenching thus decreasing the coke yield.

Moreover, the cost benefit ratio comparison conducted at Kaiserstuhl revealed that whereas a CDQ system can be installed at $70-$90 per annual ton coke produced, a wet quenching system accomplishes the same task at less than a quarter of the value ($15 per annual ton coke produced). The cost of labor and material amount to $13 million for CDQ compared to $5 million for a wet quenching system. Furthermore, revisions of CDQ (that occur every 3 years) cost another $2.5 million whereas no such revisions are required for a wet quenching system.

Dry quenching of coke facilitates the recovery of the sensible heat of coke and uses that energy to make steam which can be traded to earn proceeds. As such, a clear determinant of the profitability of the coke plant employing dry quenching lies in the domestic prices of energy. In countries such as Japan, where energy prices are high, it is more cost effective to have a CDQ system. In the U.S.A, where energy prices are much lower, wet quenching systems make for more profitable operations.

Considering the level of emissions that will be associated with the Batteries 13-15 and 19-20 quenching operation, the significantly higher costs that would be associated with employing a dry quenching system make this an unacceptable choice in this case.

For these above reasons, employing a dry system design as a means to reduce quenching emissions was rejected as BACT for this application.

Ranking of Technically Feasible Control Technology Options

As discussed above, of the available VOC, SO_2, TSP, PM_{10}, and $PM_{2.5}$ emissions control options identified above, a wet quenching system featuring a tall tower design with chevron style baffles is considered technically feasible for this application. A dry quenching system is not considered technically feasible for this application, and was not assessed further in this analysis.

The most effective available option for minimizing VOC, SO_2, TSP, PM_{10}, and $PM_{2.5}$ emissions from Batteries 13-15 and 19-20 quenching operations, therefore, is to employ a wet quenching system featuring a tall tower design with chevron style baffles. This is the system that is proposed for the Batteries 13-15 and 19-20 quench.

Top-Down Assessment of Technically Feasible Control Technology Options

Because the top-ranked technically feasible control option was selected, no further analysis of control technology options was conducted.

BACT Determination

The proposed wet quenching system featuring a tall tower design with chevron style baffles represents LAER and BACT for VOC, SO_2, TSP, PM_{10}, and $PM_{2.5}$ emissions control for Batteries 13-15 and 19-20 quenching operations.

We propose the following conditions as part of BACT for TSP, PM10, and PM2.5:

- 5% maximum of tower cross-sectional area left uncovered or open to the sky.
- 1,100 mg/L TDS in quenching makeup water

Table -1 Top-Down Evaluation of BACT Options for Batteries 13-15 and 19-20 Quenching Emissions

Technology Option	Technically Feasible?	Significant Environmental or Energy Impact?	Significant Economic Impact?	Finding
Wet quenching, with a tall tower design and chevron-style baffles	Yes	No	No	Selected as BACT and LAER
Dry quenching	No	Not Evaluated	Yes	Rejected, not technically feasible

5A and 7A Low Emission Quench Towers

U. S. Steel Mon Valley Works – Clairton Plant

Installation Permit Application

August 30, 2010

Contents

ALLEGHENY COUNTY HEALTH DEPARTMENT

AIR QUALITY PERMIT APPLICATION FORM

SECTION 1. PERMIT DESCRIPTION

Check Type of Permit:	Installation	Operating
Initial		
New Construction		
Major Modification		
Minor Modification		
Reactivation		
Temp.Source/Multi.Loc		
New Permit		
Renewal		
Adm. Permit Amend.		
Other (Explain Below)	X	

This permit application is for: Low Emission Quench Towers

Major Source	X
Minor Source	
Synthetic Minor Source (See Section 10)	

Amount enclosed: $__1,700_____

FOR ACHD USE ONLY

Permit Number: _____

Completeness: _____

Administration: _____

Engineering: _____

Assigned to: _____

Brief Description of Permit Application/Source:
Installation of Low Emission Quench Towers for Batteries 13-15 and 19-20. Project will produce a net emissions decrease, thus not a modification.

SECTION 2. APPLICANT INFORMATION

Applicant Type Code	Applicant Name or Registered Fictitious Name	FOR ACHD USE ONLY
02	United States Steel Corporation, Mon Valley Works	

First Name	M. I.	Last Name
Lisa		Roudabush

Title General Manager, Mon Valley Works

Mailing Address (Street # and Name or P. O. Box #, Box #, RR #, RD #)
P.O. Box 878

Relationship of Applicant to Permitted Activity. See instructions for appropriate code.
03

City	State	Zip Code + Extension
Dravosburg	PA	15034

Telephone (412) 675-2600	FAX (412) 675-5407	E-mail

SECTION 3. SITE INFORMATION

Facility Site Name	Federal Tax Identification Number
U. S. Steel Clairton Plant	25-0996816

Address (Street #, Street Prefix, Street Name, Street Type, Street Suffix) *P. O. BOX # IS NOT ACCEPTABLE*
400 State Street

Municipality	State	Zip Code + Extension
Clairton	PA	15025-1855

Telephone (Day) (412) 233-1003	Telephone (Eve.) (412) 233-1035	FAX (412) 233-1004

SECTION 3. (cont.)

MAP LOCATION: Please provide the Universal Transverse Mercator (UTM) coordinates or the exact latitude and longitude of the plant. UTM coordinates are preferable to latitude and longitude and can be determined from US Geological Survey 7.5 Minute 1:24,000 scale maps.

Attach a drawing of your source showing all emission points. Number each stack S001, S002, S003, etc., and number each fugitive emission location F001, F002, etc. Identify roads as paved or unpaved, marking all parking lots (see Form E). Identify the plant boundary on the map. Include local roads and other necessary identifiers that will allow the Department to locate your source on County-wide maps.

UTM North 4461.9 Or Latitude NA Degrees NA Minutes NA Seconds NORTH

UTM East 595.5 Or Longitude NA Degrees NA Minutes NA Seconds WEST

PLANT PROPERTY 400 Acres or NA Square feet

BUILDING AREA Unknown Acres or NA Square feet

GIVE TRAVEL DIRECTIONS FROM DOWNTOWN PITTSBURGH:
Travel Route 837 South to Clairton, Pennsylvania. The General Office Building is located at 400 State Street in Clairton on the left.

DESCRIPTION OF BUSINESS

GIVE A BRIEF DESCRIPTION OF BUSINESS OR ACTIVITY CARRIED OUT AT THIS LOCATION:

This facility manufactures metallurgical coke for use in the ironmaking process at various other steel mills.

PRINCIPAL PRODUCT(S):

Metallurgical Coke and Coke By-Products

APPROXIMATE NUMBER OF EMPLOYEES: 1100
If employment is seasonal, give the typical peak employment and indicate what season.
Not seasonal.

STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODE FOR THIS LOCATION:
If there is more than one activity at this location, provide the Standard Industrial Code (SIC) for the principal activity, and other SIC codes in descending order of importance.

Primary SIC Code: 3312 Primary activity: By-product coke manufacturing

Secondary SIC Code: NA Secondary activity: NA

Tertiary SIC Code: NA Tertiary activity: NA

SECTION 4. ENVIRONMENTAL CONTACT		
First Name Coleen	M. I. M.	Last Name Davis
Title Sr. Environmental Control Engineer		
Telephone (412) 233-1015		FAX (412) 233-1011
Mailing Address (Street # and Name or P. O. Box #, Box #, RR #, RD #) 400 State Street		
City Clairton	State PA	Zip Code + Extension 15025-1855
E-mail cdavis@uss.com		

SECTION 5: APPLICABLE REQUIREMENTS

In this section, briefly describe all applicable federal, state, or local air rules or requirements pertaining to the facility or any part of the facility.

"Applicable requirements" can come from any of the following:

(i.) Regulations that have been promulgated or approved by the EPA under the Clean Air Act or the regulations adopted under the Clean Air Act through rulemaking at the time of issuance but have future-effective compliance dates.

(ii.) A regulation under Allegheny County Article XXI (Air Pollution Control), including those incorporated by reference.

(iii.) A term or condition of any installation or operating permits issued pursuant to the County air quality regulations.

(iv.) A standard or other requirement under Section 111 of the Clean Air Act, including subsection (d).

(v.) A standard or other requirement under Section 112 of the Clean Air Act (42 U.S.C.A., 7412), including any requirement concerning accident prevention under subsection (r) (7).

(vi.) A standard or other requirement of the acid rain program under Title IV of the Clean Air Act (42 U.S.C.A. 7641 - 7651o) or the regulations promulgated under the Clean Air Act.

(vii.) Requirements established under Section 504(b) or Section 114(a)(3) of the Clean Air Act (42 U.S.C.A. 7414(a)(3).

(viii.) A standard or other requirement governing solid waste incineration, under Section 129 of the Clean Air Act (42 U.S.C.A. 7429).

(ix.) A standard or other requirement for consumer and commercial products, under Section 183(e) of the Clean Air Act (42 U.S.C.A. 7511b(e)).

(x.) A standard or other requirement for tank vessels, under Section 183(f) of the Clean Air Act (42 U.S.C.A. 7511b).

(xi.) A standard or other requirement of the program to control air pollution from outer continental shelf sources, under Section 328 of the Clean Air Act (42 U.S.C.A. 7627).

(xii.) A standard or other requirement of the regulations promulgated to protect stratospheric ozone under Title VI of the Clean Air Act (42 U.S.C.A. 7671-7671q), unless the Administrator of the EPA has determined that such requirements need not be contained in a Title V permit.

(xiii.) A national ambient air quality standard or increment or visibility requirement under Title I, Part C of the Clean Air Act (42 U.S.C.A. 7470-77491), but only as it would apply to temporary sources permitted pursuant to Section 504(e) of the CAA (42 U.S.C.A. 7661d).

Include any regulations that are final, but may require controls to be put on, or lower emission rates to come into effect in the future. Be as specific as necessary. For example, if you have boilers rated at 10, 70, and 100 MMBtu, then for sulfur dioxide emissions list Article XXI 2104.03 a.1, 2, and 3. When you complete the Forms for specific operations, you will be requested to repeat those requirements unique to that unit. Include general emission requirements, such as 2104.04, odor emissions, if they apply.

If there are any limitations on source operation affecting emissions or any work practice standards, provide details in this section. Include supporting documents, if necessary. If the facility is claiming any exemptions to a part of an applicable requirements stated above or any other requirements, clearly identify what section. Copy this page as needed, and attach these additional pages to this section.

An example of how Section 5.A might be completed:

Emission Regulation	Description
Art. XXI 2104.02.a.2	PM 0.40 #/10^6 BTU
Art. XXI 2104.03.a.1	SO_2 1.0 #/10^6 BTU
Art. XXI 2104.01.a	Opacity 20% for ≤3 min./hr. or 60% at no time
Art. XXI 2105.06.d.1	Low NOx Burners w/overfire air

List and summarize all applicable federal, state, or local air rules or requirements pertaining to the facility or any part of the facility. Also describe any regulated work practice standards that affect air emissions. Include any regulations that are in place, but have delayed deadlines for compliance. (COPY THIS PAGE AS NEEDED)

REGULATION DESCRIPTION

ACHD Article XXI Regulations
PART A - GENERAL
2101.11 Prohibition of air pollution
2101.12.a Interstate air pollution: General
2101.12.b Interstate air pollution: Findings by EPA
2101.17 Circumvention

PART B - PERMITS GENERALLY

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2102.05 Installation permits for new and modified major sources
2102.10 Installation permit application and administration fees

PART C - OPERATING PERMITS

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PART D - POLLUTANT EMISSION STANDARDS

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2104.01.c Visible emissions: Measurements
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2104.02 c Crushing, grinding, or screening
*2104.02 e Specific controlled process sources *(1)*
2104.02 f #3 Coke Screening
2104.03.a Sulfur oxide emissions: Fuel Burning or Combustion Equipment
2104.03.c Sulfur oxide emissions: Processes
2104.03.e Sulfur oxide emissions: Measurements
2104.04.a Odor emissions: General (LOCAL ONLY)
2104.04.c Odor emissions: Measurements (LOCAL ONLY)
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2104.06 Violations
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2105.43 Permit source transport
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Asbestos Abatement Accreditation Requirements

** (1), (2), (3) - see clarification on page 1-20.*

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2106.04 Episode Actions
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2107.20	Ambient measurements

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2108.02.c	Emissions testing: Existing sources orders
2108.02.e	Emissions testing: Existing sources testing requirements
2108.03	Continuous emissions monitoring
2108.04	Ambient monitoring

PART I - ENFORCEMENT

2109.01.a	Inspections: General
2109.03	Enforcement Orders
2109.04	Orders Establishing an Additional or More Restrictive Standards

Pennsylvania State Requirements

25 PA. Code 145	Interstate Pollution Transport Reduction

Federal Requirements

40 CFR Part 61 Subpart L	National Emission Standards for Benzene Emissions from Coke By-Product Recovery Plants
40 CFR Part 61 Subpart V	National Emission Standards for Equipment Leaks
40 CFR Part 61 Subpart Y	National Emission Standards for Benzene Emissions from Benzene Storage Vessels
40 CFR Part 63 Subpart L	National Emission Standards for Coke Oven Batteries
40 CFR Part 63 Subpart CCCCC	National Emission Standards for Pushing, Quenching, and Battery Stacks

SECTION 6: METHOD OF DEMONSTRATING COMPLIANCE

List the method of demonstrating compliance with each of the emission standards (these may become conditions of the Operating Permit):

A. Compliance Method/ Monitoring Devices:

EMISSION UNIT #	POLLUTANT	REFERENCE TEST METHOD OR COMPLIANCE METHOD OR MONITORING DEVICE	FREQUENCY / DURATION OF SAMPLING
5A Quench Tower	PM	Monitor Quench Water TDS	Weekly
7A Quench Tower	PM	Monitor Quench Water TDS	Weekly

Attach any details that would further explain the method of compliance.

B. Record keeping and Reporting:

1. List what parameter will be recorded and the frequency of recording:

PARAMETER	FREQUENCY
Quench Water Total Dissolved Solids (TDS)	Weekly

2. Describe what is to be reported and the frequency of reporting? (Reports must be submitted at least every six (6) months)

DESCRIPTION	FREQUENCY
Deviations	Semi-Annual

3. Beginning reporting date: __ /__ /__

COPY THIS PAGE AS NEEDED

SECTION 7: COMPLIANCE PLAN

A source may apply for and receive an Operating Permit if one or more emission units are out of compliance with a regulation, provided that an adequate plan is in place to bring the unit(s) into compliance.

A.__ 1. At the time of this permit application is your source in compliance with all applicable requirements, and do you expect your source to remain in compliance with these requirements during the permit duration (with the exception noted in item C)?

__ Yes _X_ No

2. Will your source be in compliance with all applicable requirements scheduled to take effect during the term of the permit, and will they be met by the applicable deadline?

_X_ Yes __ No

B.__ If you checked "No" for any question in Part A, please attach information identifying the requirement(s) and emission units for which compliance is not achieved, briefly describe how compliance will be achieved with the applicable requirement(s), and provide a detailed Schedule of Compliance (i.e., a schedule of remedial measures, including an enforceable sequence of actions with milestones and projected compliance dates). Title this portion of the document **"Schedule M: Compliance Information"**. Indicate the frequency for submittal of progress reports (at least every six (6) months) and the starting date for submittal of progress reports. See Appendix H1-H4, Compliance history information.

C.__ Do you have scheduled shutdown of control equipment for maintenance while the emission units are still operating?

_X_ Yes __ No

If yes, attach a description of the equipment that will be taken out of service, what pollutants and emission sources are affected, the schedule and duration of the shutdown, and what actions will be taken to minimize emissions.

Facility maintains a back-up quench station that will be utilized during periods during shutdown of the low emission quench tower.

SECTION 8: OTHER PERMITS

Do you own or are you related to any other permitted company in Pennsylvania?

X Yes __ No

If so, please list the company names:

U.S. Steel Mon Valley Works (i.e., USS Edgar Thomson Plant, the USS Irvin Plant, and USS Fairless)

SECTION 9: COMPLIANCE CERTIFICATION

are required to submit a certificate of compliance with all applicable requirements and a method of determining compliance those requirements (CEMS, monitoring, tests, record keeping and other reporting). Compliance certifications are to be submitted at least on an annual basis. Please answer the following:

Schedule for Submission of Compliance Certification during the term of the permit:

_X_ We will submit a Compliance Certification annually at the same time as the submittal of the annual administrative fee. OR

___ Beginning on: __ /__ /___ as defined in the Title V permit when issued

CERTIFICATION OF COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS

A "responsible official" must sign this certification. Applications without original signed certifications or necessary corporate authorizations will be returned as incomplete.

Except for the requirements identified in Section 7 for which compliance is not yet achieved, except for exceedances of emission standards resulting from breakdowns reported per Article XXI, Section 2108.01(c), except for deviations reported in the semi-annual deviation report, and except for the following clarifications for quench water, cooling tower water, big plug doors, and coal pulverizer enclosures,* I hereby certify that, based on information and belief formed after reasonable inquiry, the source identified in this application is in compliance with all applicable air requirements.**

Signature of Responsible Official

Lisa Roudabush, General Manager, Mon Valley Works
Name and Title of Signer (Print or Type)

P.O. Box 878
Mailing Address (Street # and Name or P. O. Box #, RR #, RD #, Box #)

Dravosburg, PA 15034
City, State, and Zip Code + Extension

Date: **08 / 27 / 2010**

*** This certification applies only to the revised General Plant Information section for 13-15 Low Emission Quench Tower and revised Schedule of Compliance, Schedule M. These sections replace those submitted on October 23, 2003.*

** (1) ACHD XXI, δ2104.02.e Specific Controlled Process Sources*

The compliance certification contained in this application is based on the understanding that δ2104.02.e "...enclose all coal feed chutes...", requires the enclosure of all feed chutes to the pulverizers per Paragraph 14, page 7 of the GASP Agreement, "...enclose all feed chutes to the pulverizers..."

(2) ACHD XXI, δ2104.02.h Cooling Tower Water

The compliance certification contained in this application is based on the understanding that make-up water used in the Clairton Works Cooling Tower "will be equivalent to, or better than, the water quality standards established for the Monongahela River by regulations promulgated by the DEP under the Pennsylvania Clean Streams Law, ... except that water from the Monongahela River may be used" for such make-up."

ACHD XXI, δ2105.21.b.5 Coke Ovens and Coke Oven Gas, Door Areas

The compliance certification contained in this application is based on the understanding that big plug doors, required by §2105.21.b.5, meet the specified dimensions contained in the regulation when initially installed except that portion of the plug located in the tunnel head above the design coal line. The plugs may experience

inconsequential dimensional changes over time in the course of normal operations.

(3b) ACHD XXI, §2105.21.g Quenching

The compliance certification contained in this application is based on the understanding that make-up water used for the quenching of coke "will be equivalent to, or better than, the water quality standards established for the Monongahela River by regulations promulgated by the DEP under the Pennsylvania Clean Streams Law, ... except that water from the Monongahela River may be used" for such quenching make-up.

SECTION 10: SYNTHETIC MINOR

A Major source may, at its option, choose to place limits on its operation or emissions in order to become a "Synthetic Minor" source, and not be subject to the additional requirements of a Major source. These limits will become permit restrictions and will be federally enforceable.

Does this application include any requested restrictions?
__ Yes _X_ No

If so, have these restrictions caused this site to go below Major source thresholds and become a Synthetic Minor?
__ Yes __ No

Is this facility requesting to become a Synthetic Minor source?
__ Yes _X_ No
(Please check the box on the top of page 1 as well.)

Be sure to include on each source information sheets, Forms A, B, and C, a complete description of the limitations that make this source a Synthetic Minor. Attach extra pages, if needed.

SECTION 11: INFORMATION FOR INSTALLATION PERMITS

Is this a new Major source or Major Modification for any criteria pollutant which is in or impacting a non-attainment area?
__ Yes _X_ No

If yes, list below for which pollutant(s).
NA

Attach all required documents required under Article XXI, sections 2102.05 and 2102.06.

Is this a new Major source or Major Modification for any criteria pollutant which is in or impacting an attainment area or unclassified area?
__ Yes _X_ No

If yes, list below for which pollutant(s).
NA

Attach all required documents required under Article XXI, sections 2102.05 and 2102.07.

A source applying for a Minor Installation Permit may request public review at this time.

Are you requesting public review for a Minor Installation Permit?

_X_ Yes __ No

SECTION 12: ALTERNATIVE OPERATING SCENARIOS

This permit allows for certain flexibility in operations. Please note the explanation of this section in the instructions. While filling out your permit application, consider all the different operating scenarios you might want to operate under during the 5-year term of your permit. This may include a change in inks or solvents, operating schedules, or other expected departures from operations that cannot be adequately described in the main body of the permit application.

Do you seek approval of any alternative operating scenario?

__ Yes _X_ No

If "Yes": Complete Form N to provide complete information for each alternative operating scenario to be employed at this location. Duplicate pages as needed.

Please note that there may be additional reporting requirements for alternative scenarios.

SECTION 13: ADDITIONAL SUBMITTALS

A form must be submitted for each process, boiler, incinerator, etc., as indicated below. Provide the numbers of each type of unit below, and submit the designated form for each unit. Also, identify each criteria pollutant and other regulated pollutant emitted by this source (facility). See Article XXI, definition of hazardous air pollutant and section 2101.10. Include also other pollutants not regulated, but with known emission rates. Provide the total below, and submit an emissions summary for each pollutant. List below all attachments made for this application. All applicable forms must be attached to each copy of the application.

_2_ Number of Processes - Submit one Form A for each process. Number each P001, P002, etc.
_0_ Number of Boilers - Submit one Form B for each boiler. Number each B001, B002, etc.
_0_ Number of Incinerators - Submit Form C for each incinerator. Number each I001, I002, etc.
_0_ Number of storage tanks - Submit one Form D for each tank or group of tanks. Number each D001, D002, etc.
_0_ Dry bulk materials storage and handling - Submit Form E.
_0_ Roads and vehicles - Submit Form F.
_0_ Miscellaneous fugitive emissions - Submit Form G.
_0_ Number of Form F: Roads and Vehicles.
_0_ Number of Form G: Miscellaneous Fugitive Emissions.
_0_ Number of Form K: One Emissions Summary Form for Each Pollutant.
_0_ Number of Form M: One Form M for each.
_0_ Number of Form N: One Form N for each scenario.

Are map(s)/drawing(s) attached? _X_ Yes __ No

Are required documents attached pertaining to an Installation Permit? _X_ Yes __ No

Are other comments/notes attached? _X_ Yes __ No

Is a Best Available Control Technology (BACT) analysis attached for installations? _X_ Yes __ No

Is a Compliance Assurance Monitoring (CAM) Plan (40 CFR Part 64) attached? (applicable to Title V Operating Permit Renewals.) __ Yes _X_ No

SECTION 14: ANNUAL APPLICATION / ADMINISTRATION FEE CALCULATION

INSTALLATION PERMIT APPLICATION - Check all that pertain to this application:

If this source is applicable to more than one category listed below, it is subject to the highest of the applicable fees, not to the total.

A	☐	Prevention of Significant Deterioration ($22,700)	
B	☐	Involving ACHD Development of a MACT Standard ($8,000)	
C	☐	Major new source or Major Modification ($8,000)	
D	×	Any source subject to an existing NSPS, NESHAP, or MACT ($1,700)	$1,700
E	☐	Any other installation Permit ($1,000)	
F	☐	Modification to an existing Installation Permit ($300)	

Installation Permit Fee $ 1,700

Note: An administrative fee of $750.00 will be billed to the source, beginning 30 days after the Installation Permit is approved, and annually on the anniversary of the approval thereafter, until a complete Operating Permit Application has been submitted to the Department.

OPERATING PERMIT APPLICATION - Check all that pertain to this application:

A.	Base fee (Minor or Synthetic Minor Source - $375.00 / Major Source - $750.00):	$ _____
B.	Hazardous Air Pollutant Source fee - (Major Source only - if any "hazardous air pollutants" (see 40CFR2101.10) are listed on Form K, add $375.00)	+$ _____
C.	Acid Rain Source fee (Major Source only - If any "acid rain" regulations are listed in Section 5, - add $375.00)	+$ _____
D.	Adjusted Base fee - Add A., B., and C.:	=$ _____
E.	Noncomplying Source fee (If "No" is checked in Section 7 Part A) Add 50% of the "Adjusted Base fee" from line D. above:	+$ _____
F.	Total Fee Due - Add D. and E.:	=$ _____

Checks are to be made payable to the "ACHD Air Pollution Control Fund."

All sources that apply for Operating Permits will be required to pay an annual administrative fee equal to the Operating Permit Application Fee. Major sources are also required to pay annual emissions fees. These are to be paid at the scheduled submittal of the annual emissions inventory.

SECTION 14. BILLING CONTACT

First Name Michael	M. I.	Last Name Hohman	
Title Manager, Mon Valley Works Environmental			
Telephone 412-233-1467		FAX 412-233-1011	
Mailing Address (Street # and Name or P. O. Box #, Box #, RR #, RD #): 400 Stare Street			
City Clairton		State PA	Zip Code + Extension 15025
E-mail mhohman@USS.com			

SECTION 15: SIGNATURES AND CERTIFICATION

CERTIFICATION OF COMPLETED APPLICATION

_RTIFICATION {for corporate applicants: Attach Certificate of Corporate Authority}

Subject to the penalties of Title 18 Pa. C.S. Section 4904 relating to unsworn falsification to authorities, I certify that I have the authority to submit this Permit Application on behalf of the applicant named herein and that the information provided in this Application is true and correct to the best of my knowledge and information.

Signature 8-30-10 Date

Lisa Roudabush
Name – Print or Type

General Manager, Mon Valley Works
Title – Print or Type

P.O. Box 878
Mailing Address – Print or Type

Dravosburg, PA 15034
City, State, and Zip Code + Extension – Print or Type

(412) 675-2600 Day Phone Number

(412) 675-5407 Fax Phone Number

Signature of Preparer of Form (if different than applicant).

Signature

Name, Mailing Address, and Phone# - Print or Type

Mark A Jeffrey

United States Steel Corporation

1350 Penn Avenue, Suite 200

Pittsburgh, PA 15222

412-433-5915

{For corporations:
Certificate of Corporate Authority must be completed, by the Corporate Secretary, and attached}

CERTIFICATE OF CORPORATE AUTHORITY

I, CRAIG D. MALLICK, certify that I am the Secretary of the corporation named above; that LISA ROUDABUSH who has signed this document on behalf of the corporation was then GENERAL MANAGER MON VALLEY WORKS of the said corporation; and that I know his/her signature and his/her signature is genuine; and that said Agreement was fully signed, sealed, and attested for and in behalf of said corporation by authority of its governing body.

ATTESTED TO BY: DATE: 8/30/2010

{Signature}

NAME: CRAIG D. MALLICK

{Print or type}

TITLE: SECRETARY

[AFFIX CORPORATE SEAL]

PERMIT FORM A
PROCESS OPERATIONS

PLANT NAME AND LOCATION: *USS Clairton Works - 400 State Street, Clairton,PA*

PART 1. DESCRIPTION OF PROCESS (MAKE A COPY OF SCHEDULE A FOR EACH PROCESS.)

Company Identification or Description: *5A Quench Tower (Batteries 13, 14, 15)*

ACHD Permit Number (if any)

Design ( )Charging or (X)Production rate(specify units) *1,270,200 tons of coke/year*

Total Annual Production (specify units normally used) *1,270,200 tons of coke/year*

Raw materials *Incandescent Coke*

Materials Produced *Quenched Coke*

Process Operation Units: (1) *5A Quench Tower (Batteries 13, 14, 15)*

(Name and Previous County Permit Number, if any)
(2) _____
(3) _____
(4) _____
(5) _____
(6) _____

Diagram of Process Flow: Attach a separate sheet with a drawing of a flow diagram of this process, labeling each segment listed under Process Operation Segments. Label product intake points and product discharge points for each segment. Label emissions discharge points and the location of emissions control devices.

PART 2. PROCESS OPERATION SCHEDULE

A. Normal schedule: (Provide information for last year. If a new unit, please estimate)

Hrs/day *24* Days/week *7* Weeks/year *52* Hrs/Year *8760*

Start time *00:00* End time *24:00*

Seasonal: Periods correspond to seasons instead of calendar quarters. The first season is split to include December, January, and February.

Percent of Annual Production

Dec., Jan., and Feb.: *25* June to August: *25*

March to May: *25* Sept. to Nov.: *25*

B. Requested limits: (limitations on operating hours are optional.) Choose one:
(X) 8760 hours (no limitations) or

( ) I/We request the following limitation -- This may become a federally enforceable permit condition: Describe how this can be enforced: either list an operating schedule or downtime (e.g. only operate 8:00 to 4:00) or an operating hour reporting requirement.
_____ total days x _____ hours/day = _____ hours/year

PART 3. FUELS

A. Normal Operation (Provide information for last year. If a new unit, please estimate)

NA

( )YEAR _____ or ( )Estimate

	Primary	Secondary	Other	Other
Type:				
Max amount/hour				
Sulfur content (%wt):				
Ash content (%wt):				
BTU Rating (specify units)				
Annual Fuel Consumption				
Seasonal Fuel Consumption (%):				
Dec-Feb				
Mar-May				
Jun-Aug				
Sep-Nov				

Fuel Mixing: If more than one fuel is used, explain usage, stating whether it is burned separately, mixed in a fixed ratio of ____:____ (give units such as BTU, mmcf, gallons per ton, etc.), mixed in a variable ratio of _____ to _____, determined by _____(give reason).

B. Requested limits (limitations on operations are optional, but may allow a major source to be exempted from some requirements) **These may become permit conditions.** Please check one:

( ) full use of any fuel or combination at any time (no limitations)

( ) the following limitations on types of fuels or the combination of fuels (describe how compliance with this method will be demonstrated)

PART 4. OTHER LIMITATIONS

Identify any other requested limitations, such as on production rates or materials use. Describe how compliance with these restrictions will be demonstrated. **These limitations may become permit conditions.**

NA

PART 5. APPLICABLE REQUIREMENTS (Describe all applicable requirements affecting air emissions for this unit)

Regulation # Requirements

ACHD Article XXI Regulations

2105.21(g) Coke Ovens and Coke Oven Gas (quenching emissions are vented through a baffled quench tower; the water used for quenching is equivalent or better than the water quality standards established for the nearest stream or river…except that the river from the nearest stream or river may be used for quenching of coke. The nearest stream or river to the USX Corporation facility in Clairton, PA, shall be the Monongahela River.)

The compliance certification contained in this application is based on the understanding that make-up water used for the quenching of coke "will be equivalent to, or better than, the water quality standards established for the Monongahela River by regulations promulgated by the DEP under the Pennsylvania Clean Streams Law, … except that water from the Monongahela River may be used" for such quenching make-up.

2109.03 Enforcement Orders (facility is required to comply with Enforcement Orders)

NESHAPS 40CFR63.7295

63.7295(a)(1)(i) The concentration of total dissolved solids (TDS) in the water used for quenching must not exceed 1,100 milligrams per liter (mg/L); or

63.7295(a)(1)(ii) The sum of the concentrations of benzene, benzo(a)pyrene, and naphthalene in the water used for quenching must not exceed the applicable site-specific limit approved by the permitting authority.

63.7295(a)(2) You must use acceptable makeup water, as defined in §63.7352, as makeup water for quenching.

63.7295 (b) For each quench tower at a new or existing coke oven battery and each backup quench station at a new coke oven battery, you must meet each of the requirements in paragraphs (b)(1) through (4) of this section.

63.7295 (b) (1) You must equip each quench tower with baffles such that no more than 5 percent of the cross sectional area of the tower may be uncovered or open to the sky.

63.7295 (b) (2) You must wash the baffles in each quench tower once each day that the tower is used to quench coke, except as specified in paragraphs (b)(2)(i) and (ii) of this section.

63.7295 (b) (2) (i) You are not required to wash the baffles in a quench tower if the highest measured ambient temperature remains less than 30 degrees Fahrenheit throughout that day (24-hour period). If the measured ambient temperature rises to 30 degrees Fahrenheit or more during the day, you must resume daily washing according to the schedule in your operation and maintenance plan.

63.7295 (b) (2) (ii) You must continuously record the ambient temperature on days that the baffles were not washed.

63.7295 (b) (3) You must inspect each quench tower monthly for damaged or missing baffles and blockage.

63.7295 (b) (4) You must initiate repair or replacement of damaged or missing baffles within 30 days and complete as soon as practicable.

63.7295 (c) As provided in §63.6(g), you may request to use an alternative to the work practice standards in paragraph (b) of this section.

Enforcement Orders

Enforcement Order dated 3/20/90, Item 1.d. Reporting requirements for quenching with contaminated water.

Second Consent Decree: Compliance requirement as referenced on page 15 in paragraph V.G.(vent quenching emissions through a baffled quench tower). Reporting requirements as referenced on page 38 in paragraph XIII.A.5.(reporting of quenching in violation of paragraph V.G.).

PART 6: EMISSION CONTROLS: Complete the following applicable sections for each pollution control device. Attach additional sheets to provide sufficient information and engineering calculations to support the control device performance.

On the space to the left of each device, number the device(s) by the order in which they process the waste stream(s). Fill out the requested information, and then complete the table for efficiencies by pollutant for each device.

Capture efficiency of all units ___>95___% air flow _NA_ @ _NA_ °F

_NA_ BAGHOUSE (fabric collector) Mfr.'s name, model

Type of bag material

Total filter cloth area_____sq.ft., air to cloth ratio

Bag cleaning method:_____, cycle_____min

Pressure drop: clean_____"H2O, dirty_____"H2O

Pollutant	Efficiency (%)	Basis for Eff.	Outlet grain loading

_NA_ ELECTROSTATIC PRECIPITATOR: Mfr.'s name, model

Type: ___single stage, ___two stage, ___plate, ___tube

Total collecting area:_____sq.ft., cleaning cycle_____min.

Gas Velocity_____ft./sec., corona power_____kw

Bulk resistivity of dust:_____ohm-cm Moisture content of gases:_____vol.%

Pollutant	Efficiency (%)	Basis for Eff.	Outlet grain loading

_NA_ CYCLONE (dry gas only): Mfr.'s name and model

Gas inlet: width_____ft., height_____ft.

Diameter: gas outlet_____ft., cyclone cylinder(s)_____ft.

Length of cyclone:_____ft., no. of cylinders:_____Pressure Drop _____"H2O

Pollutant	Efficiency (%)	Basis for Eff.	Outlet grain loading

_NA_ CONDENSER: Mfr.'s name and model

Type: surface_____, contact

Heat transfer area:_____sq.ft., max process pressure_____psia

Heat duty:_____BTU/hr. Coolant temp: inlet_____DF, outlet_____DF

Pollutant	Efficiency (%)	Basis for Eff.	Outlet concentration (ppm)

NA WET COLLECTOR:Mfr.'s name and model

Type: _____venturi, _____cyclone, _____spray chamber, _____packed bed

Entrainment/separator: type_____, bed depth

Type & construction of chemicals added to the scrubbing liquid:

_____Pressure drop_____"H2O

Scrubbing liquid: flow rate_____gpm, inlet temp._____DF, outlet_____DF

Pollutant	Efficiency (%)	Basis for Eff.	Outlet concentration (ppm)

NA AFTERBURNER:Mfr.'s name and model

Type: _____direct flame, _____catalytic

If catalytic: inlet temp._____DF, outlet temp._____DF, catalyst life

If direct flame: internal volume_____cu.ft., average temp._____DF

Residence time at average temp_____sec

Auxiliary fuel: max. rating_____BTU/hr, set point_____DF, _____BTU/hr

Size of Chamber_____cu.ft., flow rate

Pollutant	Efficiency (%)	Basis for Eff.	Outlet grain loading (gn/cu.ft)

NA ADSORPTION EQUIPMENT:Mfr.'s name and model

Type: _____continuous, _____, fixed bed

Adsorbing material:_____, bed depth_____in., flow area_____sq.ft.

Breakthrough (breakpoint) time:_____, Pressure drop_____"H2O

Pollutant	Efficiency (%)	Basis for Eff.	Outlet concentration (ppm)

1 OTHER TYPES: Name and describe. Attach complete details.

Quenching of incandescent coke occurs underneath a double baffled quench tower. The baffles capture particulate matter that is entrained in the water vapor emissions as they rise from the quenched coke. Baffles are estimated to control over 75 percent of the particulate emissions from quenching operations.

FUGITIVE DUST CONTROLS: Describe below or attach a complete explanation of all controls of fugitive emissions not discussed in Form E, Roads, or Form F, storage piles.

NA

PART 7. STACK DATA: Stack data must be provided for each flue, duct, pipe, stack, chimney or conduit (stacks) at which collected emissions are vented to open air through a restricted opening.

Stack Identification *5A Quench Tower (Batteries 13, 14, 15)*

UTM East *595.221* UTM North *4462.385* or

Longitude *NA* Latitude *NA*

Most important stacks have been located on topographic or air navigation charts. If you know the UTM coordinates or latitude and longitude provide this information. If there is a number of stacks close together, a common location may be used.

Stack Height: *164* ft Ground level elevation: *760* ft Diameter *33'10" by 24'11"*

Material Outer: *Wood* baffles: *Polypropylene (upper) and stainless steel (lower)*

Exit Temperature (F): *220* Exit Velocity: *11.5 - 13.2* (f/s)

Exhaust Rate: *Unknown* (ACFM) % Moisture *Unknown*

Nearest building to stack: *15 Battery* distance ____ ft height ____ ft

length ____ ft width ____ ft

Processes Sharing Stack: If more than one process shares a stack, list them and estimate relative contribution of each.

Description *NA*

Contribution to emissions from stack: ____ %

Description *NA*

Contribution to emissions from stack: ____ %

Description *NA*

Contribution to emissions from stack: ____ %

PART 8. Remarks

Attach calculations and reference all emission factors for Allowable, Potential to Emit, and Actual emissions to this sheet. Reference all emission factors and efficiencies of control equipment.

SEE ANNUAL AIR EMISSION INVENTORY REPORT

Note: It is possible that there are additional Title V regulated air pollutants in the emission relating to this source; however, an applicable requirement for such pollutant(s) does not exist.

PART 9a: EMISSIONS -- SHORT TERM LB/HR or other

Pollutant	Particulate*	PM10*	PM2.5*	SO2	CO	NOx	VOC	LEAD
Allowable								
Maximum Potential	2.90	2.18	1.45	NA	NA	NA	NA	NA
Actual or Estimated	2.90	2.18	1.45	NA	NA	NA	NA	NA

*Filterable Particulate Only

Pollutant	Cyanide Compounds	Naphthalene	Phenol	Polycylic Organic Matter
Allowable	NA	NA	NA	NA
Maximum Potential	NA	NA	NA	NA
Actual or Estimated	NA	NA	NA	NA

PART 9b: EMISSIONS -- ANNUAL TPY

Pollutant	Particulate*	PM10*	PM2.5*	SO2	CO	NOX	VOC	LEAD
Allowable								
Maximum Potential	12.70	9.53	6.35	NA	NA	NA	NA	NA
Actual or Estimated	12.70	9.53	6.35	NA	NA	NA	NA	NA

*Filterable Particulate Only

Pollutant	Cyanide Compounds	Naphthalene	Phenol	Polycylic Organic Matter
Allowable	NA	NA	NA	NA
Maximum Potential	NA	NA	NA	NA
Actual or Estimated	NA	NA	NA	NA

List all known pollutants, including, but not limited to those found under Article XXI section 2103.10 and the definition of Hazardous Air Pollutants.

Transfer this information to the summary emissions sheets.

PERMIT FORM A
PROCESS OPERATIONS

PLANT NAME AND LOCATION: *USS Clairton Works - 400 State Street, Clairton,PA*

PART 1. DESCRIPTION OF PROCESS (MAKE A COPY OF SCHEDULE A FOR EACH PROCESS.)

Company Identification or Description: *7A Quench Tower (Batteries 19 & 20)*

ACHD Permit Number (if any)

Design ( )Charging or (X)Production rate(specify units) *1,555,630 tons of coke/year*

Total Annual Production (specify units normally used) *1,555,630 tons of coke/year*

Raw materials *Incandescent Coke*

Materials Produced *Quenched Coke*

Process Operation Units: (1) *7A Quench Tower (Batteries 19 & 20)*

(Name and Previous County Permit Number, if any)
(2)
(3)
(4)
(5)
(6)

Diagram of Process Flow: Attach a separate sheet with a drawing of a flow diagram of this process, labeling each segment listed under Process Operation Segments. Label product intake points and product discharge points for each segment. Label emissions discharge points and the location of emissions control devices.

PART 2. PROCESS OPERATION SCHEDULE

A. Normal schedule: (Provide information for last year. If a new unit, please estimate)

Hrs/day *24* Days/week *7* Weeks/year *52* Hrs/Year *8760*

Start time *00:00* End time *24:00*

Seasonal: Periods correspond to seasons instead of calendar quarters. The first season is split to include December, January, and February.

Percent of Annual Production

Dec., Jan., and Feb.: *25* June to August: *25*

March to May: *25* Sept. to Nov.: *25*

B. Requested limits: (limitations on operating hours are optional.) Choose one:
(X) 8760 hours (no limitations) or

( ) I/We request the following limitation -- This may become a federally enforceable permit condition: Describe how this can be enforced: either list an operating schedule or downtime (e.g. only operate 8:00 to 4:00) or an operating hour reporting requirement.
_____ total days x _____ hours/day = _____ hours/year

PART 3. FUELS

A. Normal Operation (Provide information for last year. If a new unit, please estimate)

NA

( )YEAR _____ or ( )Estimate	Primary	Secondary	Other	Other
Type:				
Max amount/hour				
Sulfur content (%wt):				
Ash content (%wt):				
BTU Rating (specify units)				
Annual Fuel Consumption				
Seasonal Fuel Consumption (%):				
Dec-Feb				
Mar-May				
Jun-Aug				
Sep-Nov				

Fuel Mixing: If more than one fuel is used, explain usage, stating whether it is burned separately, mixed in a fixed ratio of ____:____ (give units such as BTU, mmcf, gallons per ton, etc.), mixed in a variable ratio of _____ to _____, determined by _____(give reason).

B. Requested limits (limitations on operations are optional, but may allow a major source to be exempted from some requirements) These may become permit conditions. Please check one:

( ) full use of any fuel or combination at any time (no limitations)

( ) the following limitations on types of fuels or the combination of fuels (describe how compliance with this method will be demonstrated)

PART 4. OTHER LIMITATIONS

Identify any other requested limitations, such as on production rates or materials use. Describe how compliance with these restrictions will be demonstrated. These limitations may become permit conditions.

NA

PART 5. APPLICABLE REQUIREMENTS (Describe all applicable requirements affecting air emissions for this unit)

Regulation # Requirements

ACHD Article XXI Regulations

2105.21(g) Coke Ovens and Coke Oven Gas (quenching emissions are vented through a baffled quench tower; the water used for quenching is equivalent or better than the water quality standards established for the nearest stream or river…except that the river from the nearest stream or river may be used for quenching of coke. The nearest stream or river to the USX Corporation facility in Clairton, PA, shall be the Monongahela River.)

The compliance certification contained in this application is based on the understanding that make-up water used for the quenching of coke "will be equivalent to, or better than, the water quality standards established for the Monongahela River by regulations promulgated by the DEP under the Pennsylvania Clean Streams Law, … except that water from the Monongahela River may be used" for such quenching make-up.

2109.03 Enforcement Orders (facility is required to comply with Enforcement Orders)

NESHAPS 40CFR63.7295

63.7295(a)(1)(i) The concentration of total dissolved solids (TDS) in the water used for quenching must not exceed 1,100 milligrams per liter (mg/L); or

63.7295(a)(1)(ii) The sum of the concentrations of benzene, benzo(a)pyrene, and naphthalene in the water used for quenching must not exceed the applicable site-specific limit approved by the permitting authority.

63.7295(a)(2) You must use acceptable makeup water, as defined in §63.7352, as makeup water for quenching.

63.7295 (b) For each quench tower at a new or existing coke oven battery and each backup quench station at a new coke oven battery, you must meet each of the requirements in paragraphs (b)(1) through (4) of this section.

63.7295 (b) (1) You must equip each quench tower with baffles such that no more than 5 percent of the cross sectional area of the tower may be uncovered or open to the sky.

63.7295 (b) (2) You must wash the baffles in each quench tower once each day that the tower is used to quench coke, except as specified in paragraphs (b)(2)(i) and (ii) of this section.

63.7295 (b) (2) (i) You are not required to wash the baffles in a quench tower if the highest measured ambient temperature remains less than 30 degrees Fahrenheit throughout that day (24-hour period). If the measured ambient temperature rises to 30 degrees Fahrenheit or more during the day, you must resume daily washing according to the schedule in your operation and maintenance plan.

63.7295 (b) (2) (ii) You must continuously record the ambient temperature on days that the baffles were not washed.

63.7295 (b) (3) You must inspect each quench tower monthly for damaged or missing baffles and blockage.

63.7295 (b) (4) You must initiate repair or replacement of damaged or missing baffles within 30 days and complete as soon as practicable.

63.7295 (c) As provided in §63.6(g), you may request to use an alternative to the work practice standards in paragraph (b) of this section.

Enforcement Orders

Enforcement Order dated 3/28/90, Item 1.d. Reporting requirements for quenching with contaminated water.

Second Consent Decree: Compliance requirement as referenced on page 15 in paragraph V.G. (vent quenching emissions through a baffled quench tower). Reporting requirements as referenced on page 38 in paragraph XIII.A.5. (reporting of quenching in violation of paragraph V.G.).

PART 6: EMISSION CONTROLS: Complete the following applicable sections for each pollution control device. Attach additional sheets to provide sufficient information and engineering calculations to support the control device performance.

On the space to the left of each device, number the device(s) by the order in which they process the waste stream(s). Fill out the requested information, and then complete the table for efficiencies by pollutant for each device.

Capture efficiency of all units ___≥ 95___% air flow _NA_ @ _NA_ °F

_NA_ BAGHOUSE (fabric collector) Mfr.'s name, model

Type of bag material

Total filter cloth area_____sq.ft., air to cloth ratio

Bag cleaning method:_____, cycle_____min

Pressure drop: clean_____"H2O, dirty_____"H2O

Pollutant	Efficiency (%)	Basis for Eff.	Outlet grain loading

_NA_ ELECTROSTATIC PRECIPITATOR: Mfr.'s name, model

Type: ___single stage, ___two stage, ___plate, ___tube

Total collecting area:_____sq.ft., cleaning cycle_____min.

Gas Velocity_____ft./sec., corona power_____kw

Bulk resistivity of dust:_____ohm-cm Moisture content of gases:_____vol.%

Pollutant	Efficiency (%)	Basis for Eff.	Outlet grain loading

_NA_ CYCLONE (dry gas only): Mfr.'s name and model

Gas inlet: width_____ft., height_____ft.

Diameter: gas outlet_____ft., cyclone cylinder(s)_____ft.

Length of cyclone:_____ft., no. of cylinders:_____Pressure Drop _____"H2O

Pollutant	Efficiency (%)	Basis for Eff.	Outlet grain loading

_NA_ CONDENSER: Mfr.'s name and model

Type: surface_____, contact

Heat transfer area:_____sq.ft., max process pressure_____psia

Heat duty:_____BTU/hr. Coolant temp: inlet_____DF, outlet_____DF

Pollutant	Efficiency (%)	Basis for Eff.	Outlet concentration (ppm)

NA WET COLLECTOR:Mfr.'s name and model

Type: _____venturi, _____cyclone, _____spray chamber, _____packed bed

Entrainment/separator: type_____, bed depth

Type & construction of chemicals added to the scrubbing liquid:

_____Pressure drop_____"H2O

Scrubbing liquid: flow rate_____gpm, inlet temp._____DF, outlet_____DF

Pollutant	Efficiency (%)	Basis for Eff.	Outlet concentration (ppm)

NA AFTERBURNER:Mfr.'s name and model

Type: _____direct flame, _____catalytic

If catalytic: inlet temp._____DF, outlet temp._____DF, catalyst life

If direct flame: internal volume_____cu.ft., average temp._____DF

Residence time at average temp_____sec

Auxiliary fuel: max. rating_____BTU/hr, set point_____DF, _____BTU/hr

Size of Chamber_____cu.ft., flow rate

Pollutant	Efficiency (%)	Basis for Eff.	Outlet grain loading (gn/cu.ft)

NA ADSORPTION EQUIPMENT:Mfr.'s name and model

Type: _____continuous, _____, fixed bed

Adsorbing material:_____, bed depth_____in., flow area_____sq.ft.

Breakthrough (breakpoint) time:_____, Pressure drop_____"H2O

Pollutant	Efficiency (%)	Basis for Eff.	Outlet concentration (ppm)

1 OTHER TYPES: Name and describe. Attach complete details.

Quenching of incandescent coke occurs underneath a double baffled quench tower. The baffles capture particulate matter that is entrained in the water vapor emissions as they rise from the quenched coke. Baffles are estimated to control over 75 percent of the particulate emissions from quenching operations.

FUGITIVE DUST CONTROLS: Describe below or attach a complete explanation of all controls of fugitive emissions not discussed in Form E, Roads, or Form F, storage piles.

NA

PART 7. STACK DATA: Stack data must be provided for each flue, duct, pipe, stack, chimney or conduit (stacks) at which collected emissions are vented to open air through a restricted opening.

Stack Identification 7A Quench Tower (Batteries 19 & 20)

UTM East 595.190 UTM North 4462.294 or

Longitude NA Latitude NA

Most important stacks have been located on topographic or air navigation charts. If you know the UTM coordinates or latitude and longitude provide this information. If there is a number of stacks close together, a common location may be used.

Stack Height: 164 ft Ground level elevation: 760 ft Diameter 33'10" by 24'11"

Material Outer: Wood baffles: Polypropylene (upper) and stainless steel (lower)

Exit Temperature (F): 220 Exit Velocity: 11.5 - 13.2 (f/s)

Exhaust Rate: Unknown (ACFM) % Moisture Unknown

Nearest building to stack: 20 Battery distance ____ ft height ____ ft

length ____ ft width ____ ft

Processes Sharing Stack: If more than one process shares a stack, list them and estimate relative contribution of each.

Description NA

Contribution to emissions from stack: ____ %

Description NA

Contribution to emissions from stack: ____ %

Description NA

Contribution to emissions from stack: ____ %

PART 8. Remarks

Attach calculations and reference all emission factors for Allowable, Potential to Emit, and Actual emissions to this sheet. Reference all emission factors and efficiencies of control equipment.

SEE ANNUAL AIR EMISSION INVENTORY REPORT

Note: It is possible that there are additional Title V regulated air pollutants in the emission relating to this source; however, an applicable requirement for such pollutant(s) does not exist.

PART 9a: EMISSIONS -- SHORT TERM LB/HR or other

Pollutant	Particulate	PM10	PM2.5	SO2	CO	NOx	VOC	LEAD
Allowable								
Maximum Potential	3.55	2.66	1.78	NA	NA	NA	NA	NA
Actual or Estimated	3.55	2.66	1.78	NA	NA	NA	NA	NA

Pollutant	Cyanide Compounds	Naphthalene	Phenol	Polycylic Organic Matter
Allowable	NA	NA	NA	NA
Maximum Potential	NA	NA	NA	NA
Actual or Estimated	NA	NA	NA	NA

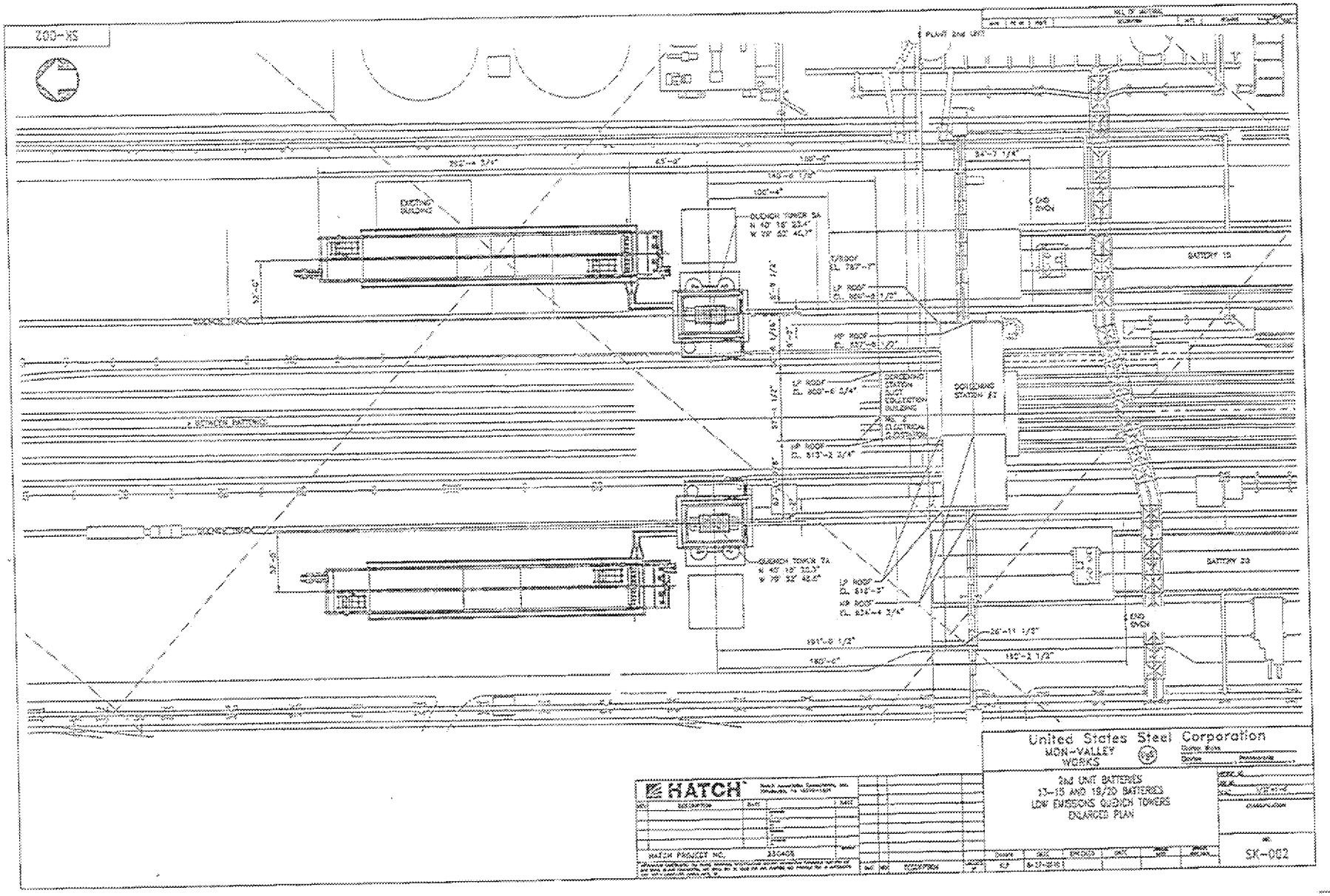
PART 9b: EMISSIONS -- ANNUAL TPY

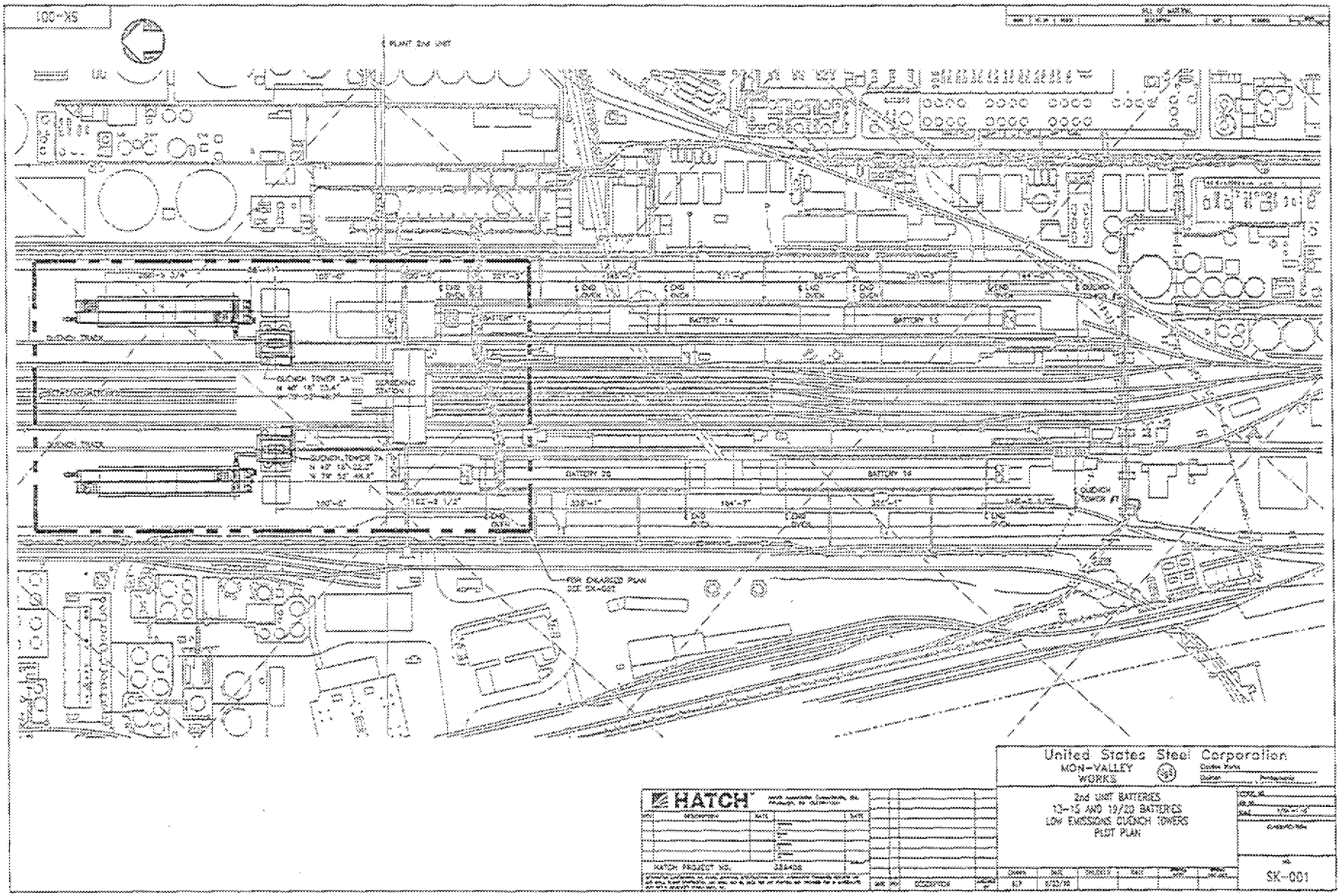
Pollutant	Particulate	PM10	PM2.5	SO2	CO	NOX	VOC	LEAD
Allowable								
Maximum Potential	15.56	11.67	7.78	NA	NA	NA	NA	NA
Actual or Estimated	15.56	11.67	7.78	NA	NA	NA	NA	NA

Pollutant	Cyanide Compounds	Naphthalene	Phenol	Polycylic Organic Matter
Allowable	NA	NA	NA	NA
Maximum Potential	NA	NA	NA	NA
Actual or Estimated	NA	NA	NA	NA

List all known pollutants, including, but not limited to those found under Article XXI section 2103.10 and the definition of Hazardous Air Pollutants.

Transfer this information to the summary emissions sheets.





13-15 Batteries Quenching Emissions

	13-15 Batteries Baseline July 2004 - June 2006		13-15 Batteries Future Potential	
COKE PRODUCED per year	944,508	Tons	1,270,350	Tons
COAL CHARGED per year	1,283,585	Tons	1,537,025	Tons
Coke per quench	11.1	Tons	11.1	Tons

QUENCH TOWER

POLLUTANT	Baseline			Future			REDUCTION
	Emission Factor	Emissions	Reference for Emission Factor	Emission Factor	Emissions	Reference for Emission Factor	
	lb/ton coke	Tons per Year		lb/ton coke	Tons per Year		Tons per Year
PM total	1.41E+00	665.410	The TPM has been scaled up from PM2.5 by dividing the PM2.5 EF by 0.5.	2.69E-02	12.702	Manufacturer's (UHDE) guarantee	652.708
$PM_{2.5}$	7.05E-01	332.705	Quench tower test conducted on B battery Quench tower on Oct. 3-5, 2007.	1.00E-02	6.351	Scaled down from total PM by multiplying the TPM EF by 0.5	326.354
PM_{10}	1.06E+00	499.058	PM10 EF has been scaled down by multiplying the TPM EF by 0.75.	1.50E-02	9.527	Scaled down from total PM by multiplying the TPM EF by 0.75	489.531
	lb/ton coal	Tons per Year		lb/ton coal	Tons per Year		
PM (condensible)	1.41E-01	91.162	non-PM constituents from the B test have the EF = 0.141lb/ton coal	1.41E-01	115.410	non-PM constituents from the B test have the EF = 0.141lb/ton coal	-24.218
$PM_{2.5}$ (filt.+condensible)		423.897			121.761		302.136
PM_{10} (filt.+condensible)		590.259			124.937		465.313

Emission factors of lb/quench have been converted to lb/ton coke. PM10 = 0.75 * TSP and PM2.5 = 0.5 * TSP

19-20 Batteries Quenching Emissions

	19-20 Batteries Baseline November 2006 - October 2008		19-20 Batteries Future Potential	
COKE PRODUCED per year	952,243	Tons	1,555,839	Tons
COAL CHARGED per year	1,326,214	Tons	2,664,569	Tons
Coke per quench	13.8	Tons	13.8	Tons

QUENCH TOWER							
POLLUTANT	Baseline			Future			REDUCTION
	Emission Factor	Emissions	Reference for Emission Factor	Emission Factor	Emissions	Reference for Emission Factor	
	lb/ton coke	Tons per Year		lb/ton coke	Tons per Year		Tons per Year
PM total	1.13E+00	542.438	The TPM has been scaled up from PM2.5 by dividing the PM2.5 EF by 0.5.	2.00E-02	15.556	Manufacturer's (UHDE) guarantee	526.881
$PM_{2.5}$	5.67E-01	271.219	Quench tower test conducted on B battery Quench tower on Oct. 3-5, 2007.	1.00E-02	7.778	Scaled down from total PM by multiplying the TPM EF by 0.5	263.441
PM_{10}	8.50E-01	406.828	PM10 EF has been scaled down by multiplying the TPM EF by 0.75.	1.50E-02	11.667	Scaled down from total PM by multiplying the TPM EF by 0.75	395.161
	lb/ton coal	Tons per Year		lb/ton coal	Tons per Year		
PM (condensible)	1.41E-01	93.498	non-PM constituents from the B test have the EF = 0.14 lb/ton coal	1.41E-01	141.323	non-PM constituents from the B test have the EF = 0.141lb/ton coal	-47.825
$PM_{2.5}$ (filt.+condensible)		364.717			148.101		215.616
PM_{10} (filt.+condensible)		500.326			152.990		347.336

Emission factors of lb/quench have been converted to lb/ton coke. PM10 = 0.75 * TSP and PM2.5 = 0.5 * TSP